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ABSTRACT

This paper describes a community-based approach to delinquency prevention utilizing indigenous nonprofessionals as behavior change agents. Adult residents in two Model Cities communities served as "buddies" of youth referred for behavior and academic problems. The principles and techniques of behavior modification were used in the training of nonprofessionals as change agents and in the treatment of youth in the project. The program evaluation includes an analysis of the various treatment techniques employed. The results indicate that school attendance increased with application of social and material rewards, while other problem behavior was reduced. The findings suggest that reinforcement is a crucial ingredient in the behavior change process. (Author/SES)

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THE BUDDY SYSTEM MODEL:

COMMUNITY-BASED DELINQUENCY PREVENTION

UTILIZING INDIGENOUS NONPROFESSIONALS AS BEHAVIOR CHANGE AGENTS[1]

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Introduction

This paper describes a model for community intervention which is unique and exciting in conception and operation. Known as the Buddy System, this program is a community-based approach to delinquency prevention utilizing indigenous nonprofessionals as behavior change agents. As such, the project represented an intriguing attempt to combine three promising thrusts currently emerging in the helping professions: (1) the use of a community intervention model, (2) the use of nonprofessionals, and (3) the use of a behavior modification approach. Recent work in these areas has supported the utility of each of these approaches in helping youth in trouble with society.

It is becoming widely acknowledged that the greatest potential for helping and for fostering behavioral change resides in the community (Smith and Hobbs, 1966). The traditional mode of treatment -- removal of the deviant individual from his home environment to large institutions such as correctional facilities and mental hospitals -- has not been widely successful (Berelson and Steiner, 1964; Bloch and Flynn, 1966; Huetteman et al., 1970). In the wake of the failure of institutional environments to provide therapeutic amelioration, treatment of delinquent youth in community-based settings has assumed increased prominence (Kennedy, 1971; Phillips, 1968; Rose et al., 1970).

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There is also a growing trend in community programs toward the use of indigeneous nonprofessionals as social action agents. The forces behind this movement include the recognition that (1) the current demand for trained helpers far exceeds the supply (Albee, 1959, 1965; Pearl and Riessman, 1965; Reiff, 1966) and that (2) hyperprofessionalism in the helping professions disqualifies society's most promising potential helpers from the helping enterprise (Goldberg, 1969; Hobbs, 1964).

Similarly, the application of behavior modification principles to the solution of human problems has gained increased impetus in recent years. Indeed, the efficacy and efficiency of behavior modification techniques have been impressively documented in a wide variety of settings and with diverse populations (Bandura, 1969; Franks, 1969; Ullmann and Krasner, 1969).

In the Buddy System model of intervention, these multiple approaches were blended within a single program and integrated into the delivery of effective human services.

The central figures in the Buddy System were the Buddies. These adults residents in the community served as "buddies" of youths identified as delinquent or predelinquent. Each youngster participating in the project received the friendship and companionship of an adult resident in the community. Each adult buddy worked with three youths and extended to them a relationship of mutual affection, respect, and trust. The buddy met with his youngsters individually, and at times as a group; they engaged in such activities as arts and crafts, going to rock concerts, camping, surfing, fishing, and simply rapping. Buddies attempted to guide and influence their youngsters to engage in socially appropriate behaviors through their relationship and through the contingent use of social and material reinforcement.

While the Buddy System was a Model Cities project operated by the Family Court, numerous agencies in the community were involved in the implementation of the program. Among them were the Social Welfare Development and Research Center which provided the graduate students who trained the buddies, and the Department of Education which referred youths who were dropouts or potential dropouts to the program.

Objectives

The primary objective of the Buddy System was to demonstrate, using nonprofessionals, successful techniques for altering the behavior of potential dropouts, dropouts, and delinquents. The project was aimed at promoting prosocial behavior, academic achievement, and occupational opportunities among youth referred to the project. Priority was given to motivating potential dropouts to remain in school and dropouts to return to school.

While the primary target population serviced by the Buddy System was youths referred to the project, nonprofessionals serving as buddies in the project constituted an important target population. Thus a second major objective of the project was to demonstrate the use of nonprofessional residents as effective change agents. The aim was to equip nonprofessionals with the requisite skills and techniques for successful behavioral intervention with youth, thereby increasing the number of skilled and experienced helpers in the community. In this regard, the Buddy System was aimed specifically at providing buddies with the preparation, training, and experience that afforded them the opportunity for entry into careers in youth development and delinquency prevention.

Organizational Structure

The triadic model of therapeutic intervention as presented by Tharp and Wetzel (1969) served as the organizational basis of the Buddy System. In this operational schema, behavioral modification is effected in the natural environment through a person (mediator) who occupies some normal role relationship with the deviant individual (target). The professional (consultant) or subprofessional (behavior analyst) does not deal directly with the target but instead advises the mediator in ways of intervening with the target. In the Buddy System, professionals (consultants) directed graduate students (behavior analysts) in providing training and supervision to indigenous nonprofessionals (mediators). These buddies intervened directly in altering the deviant behaviors of youngsters (targets) through the establishment of buddy relationships.

Personnel in the Triadic Organization

The following description of the personnel in the project and their role behaviors is embedded within the framework afforded by the triadic organization.

The Targets

The target population in the triadic organization consisted of youngsters presenting behavior management problems in the home, school, and community. Youth referred to the Buddy System displayed a wide range of problems: truancy, poor academic achievement, classroom disruption, poor family relations, curfew violation, stealing, bullying, and fighting.

Referrals of behaviorally disordered children to the project were made by the schools, the police, the Family Court, various social welfare agencies, and concerned private citizens and parents. The large majority

of referrals were generated by the public schools in the two Model Neighborhood Areas.

Youngsters were invited to participate in the Buddy System according to the following criteria: (1) they were residents of the Model Neighborhood Areas, (2) they were between the ages of 10 and 17, and (3) they displayed behavior problems serious enough in nature or frequency to warrant intervention.

The total target population served by the Buddy System during the first action year consisted of 93 youths -- 63 boys and 30 girls. Their age range was from 11 to 17 years, with a mean age of 14. The large majority of these youths were in the 7th and 8th grades. Their ethnic backgrounds included Hawaiian, Filipino, Japanese, Chinese, and Caucasian. Twenty-three youths (24.7%) had been adjudicated, while 24 youngsters (25.8%) had arrest records. Youth served in the project came from low income families residing in the two Model Neighborhood Areas of Kalihi-Palama and the Nanakuli-Waianae Coast. The former is an urban area while the latter is a rural area.

The Mediators

The buddies were a heterogeneous group on a number of dimensions. They ranged in age from 17 to 65, included both sexes, and represented a diversity of ethnic and occupational groups.

It is in their formal educational backgorund that one finds perhaps the most profound differences. In attainment of formal education, buddies ranged from fourth grade dropout to completion of college and attainment of master's degrees. The median educational level attained was the twelfth grade.

Buddies were recruited through advertisements in newspapers circulated

in the two Model Neighborhood Areas. Altogether, a total of 39 buddies participated in the project, though only 24 buddies remained actively involved with the program throughout the entire first year.

Buddies serving as mediators were trained to engage in the following role behaviors: (1) meet at least once weekly with their target youngsters, and participate in social and recreational activities with them; (2) establish a warm and positive relationship with each of their youngsters; (3) identify problem areas and specify them in behavioral terms; (4) count the frequency of occurrence of the targeted behaviors, and submit weekly behavioral data to the behavior analyst; (5) identify reinforcers for their youngsters; (6) draw up and implement intervention programs aimed at ameliorating the youngsters' problem behaviors through the systematic application of rewards on contingency to the youngsters for desired behaviors; and (7) serve as an advocate for the youngsters in their dealings with persons in their environment.

The Behavior Analysts

The behavior analysts during the first project year were four graduate students in Clinical Psychology, Social Psychology, and Social Work. They were placed at the Social Welfare Development and Research Center by their respective academic departments as interns and graduate assistants. These behavior analysts were first- and second-year graduate students.

The following specific behaviors characterized the role of the behavior analysts: (1) maintain responsibility for the day-to-day details of managing the behaviors of the buddies; (2) provide the buddies with intensive and ongoing training in the principles and techniques of behavior modification; (3) provide the buddies with continuous consultation and supervision in case management both by telephone and in the field; (4) design

intervention plans for ameliorating behavior problems of target youngsters; (5) collect and graph weekly behavioral data submitted by the buddies; (6) troubleshoot difficulties as they arose in the buddy-youngster relationship and in the intervention program; (7) monitor the activities of the buddies, and shape through systematic rewards their behaviors so as to enhance their functioning as buddies.

The Consultants

The professionals were three staff members of the Social Welfare Development and Research Center of the University of Hawaii. Their expertise were in the fields of education, social work, and clinical/community psychology. All were specialists in developing and evaluating community action programs and in providing consultation in program development to a wide variety of community agencies.

The role of the consultants encompassed the following task behaviors: (1) maintain overall administrative responsibility for training, research, and evaluation of the project; (2) conduct ongoing program planning and development; (3) maintain responsiblity for collecting and analyzing the data for research and evaluative purposes; (4) provide the behavior analysts with expertise and training in behavioral technology; (5) provide ongoing consultation and supervision to the behavior analysts in designing and implementing intervention programs for the target youngsters; (6) monitor the record-keeping functions of the behavior analysts to ensure decision-making consistent with the data; and (7) shape the behaviors of the behavior analysts in such a way as to maximize their success in working with the buddies.

The Point System

Buddies earned points for specified behavioral performances. These

points, when exchanged for money on a pre-established basis, constituted the means of remuneration for services rendered.

Buddies earned and accumulated specified numbers of points for engaging in the following criterion behaviors: (1) making a weekly contact with each of their assigned youngsters; (2) submitting weekly behavioral data and completing weekly assignments on each youngster; (3) submitting weekly log sheets; and (4) attending biweekly training sessions.

In addition, buddies earned bonus points for either (1) meeting more than once a week with their youngsters or (2) meeting once a week or more with significant others in their youngsters' environment.

Buddies tallied their point earnings on a weekly basis, and received monetary compensation once every week. Depending upon their behaviors during the course of the week, buddies could earn a maximum of 20 points convertible to $40 per week. This amounted to maximum earnings of 72 points or $144 per month.

The point system, as designed and implemented in the Buddy System, had a number of distinct functions and advantages. First and foremost, the point system, in serving as the basis for the buddies' payment schedule, afforded a measure of accountability. This system of remuneration for behaviors rendered exerted a real degree of control over the quality and quantity of buddies' work behaviors. The very nature of the role of the buddy allowed for an enormous amount of independent functioning; a large part of the buddy's work involved "doing his own thing" with his youngsters "out there" in the community. Within this broad range of functioning, the point system served to maintain control of the buddies' performances by motivating them to engage in those behaviors deemed important and critical to their success as change agents.

Secondly, the Buddy System's token economy system served a distinctly didactic function. Instituted at the onset of the project year and functioning as the very backbone of the buddies' payment system, the points provided the buddy-trainees with first-hand knowledge and experience in the principles of reinforcement. They learned the function of reinforcement in a personally meaningful fashion, before applying the same principles of learning in working with target youngsters.

Thirdly, the point system enabled important buddy behaviors to be highlighted, prompted, and then reinforced. This was especially valuable when certain buddy behaviors assumed especial importance at particular points in time. For example, as buddies progressed with their youngsters, the important task behaviors changed from (1) specifying problem behaviors to (2) collecting baseline data to (3) implementing the intervention plan, and so forth. Through the point system, important buddy behaviors were specifically targeted by attaching point contingencies to them in a highly individualized and idiosyncratic manner. The point system could thus readily be made to fit an individualized, behavioral contract between the behavior analyst and buddy.

In the same manner, the point system could be used to facilitate the implementation of experimental/treatment conditions constituting the project's research design. Indeed, the point system complemented the experimental method well. Simple manipulations of those classes of behaviors that earned points allowed for convenient and effective control of the behaviors that buddies emit. Accordingly, different groups of buddies could earn their points for behaving in ways consistent with the experimental condition in which they found themselves. Also, behaviors critical to the effective implementation of the experimental conditions could be

systematically prompted and reinforced by attaching bonus point contingencies differentially to them. Clearly, the point system represented a powerful means for ensuring rigor in instituting treatment conditions in the Buddy System.

Yet a fifth advantage of the use of the point system in the project was the objectivity and depersonalization it afforded. Buddies quickly learned that the behaviors asked of them were objectively specified. Criteria for completion of task behaviors were clear and removed from subjective judgement. On the human interactional level, what this meant was that there was little reason for behavior analysts to hassle with the buddies over their behavioral performances.

Finally, the point system as designed enabled buddies to self-administer their rewards. The buddies gave themselves points as they fulfilled the criterion behaviors; they tallied their point totals weekly. In this way, the rewards for desirable behavior were mediated (1) by the buddies themselves, (2) immediately, and (3) in the environment in which the behavior occurred.

Training of Buddies

The broad objectives of the training program for buddies were to provide them with the requisite knowledge and skills for (1) establishing and maintaining a warm and positive relationship with their youngsters; (2) functioning effectively in the role of mediators in their youngsters' environment; and (3) functioning effectively in the role of behavior analysts with respect to significant adults in their youngsters' natural environment.

Initially, buddy training sessions of three-hour duration were held on Saturday mornings every week for six weeks. These were followed by

biweekly Saturday training sessions conducted throughout the duration of the project year. Each behavior analyst was randomly assigned eight buddy-trainees whom he trained and supervised both individually and as a team.

Throughout the program buddies received ongoing training and supervision in developing the necessary skills and techniques for effective behavioral intervention with target youth. As in the case of youth participating in the program, specific behaviors of adult buddies were targeted for intervention. In short, essentially the same behavioral technology that was employed for fostering appropriate behavior in target youth was also applied in training buddies to be effective change agents.

Accordingly, the requisite skills for successful functioning as buddies were defined as much as possible in precise and objective behavioral terms. Important buddy behaviors were specified and their occurrence was programmed to meet with reinforcing consequences -- in the form of the social approval of the behavior analyst as well as greater point earnings. In addition to the material rewards embedded within the point system, instructions, prompts, and socially reinforcing consequences were systematically employed by the behavior analyst as a means of fostering the acquisition and maintenance of desired buddy behaviors. Modeling and role-playing procedures were also used extensively in teaching the buddies the requisite human relations skills and intervention techniques for helping their youngsters.

Initial emphasis in the training of the buddies was focused on helping them in (1) making the first contact and (2) establishing a warm and trusting relationship with their youngsters. Subsequent training prepared buddies for (3) meeting with parents and teachers of their youngsters, (4) identifying problem areas for each of their youngsters and specifying these problems in behavioral terms, (5) collecting weekly behavioral counts of the targeted

behaviors, (6) identifying reinforcers for their youngsters, and (7) designing and implementing intervention plans aimed at increasing the occurrence of appropriate behaviors and decreasing the occurrence of unacceptable behaviors.

Instruction occurred in large lecture groups, in small groups comprised of each behavior analyst with his team members, and in individual, behavior analyst-buddy tutorial sessions. In addition, small group discussions were conducted in which buddies could share with each other their experiences and current problems in "getting it on" with their youngsters.

As buddies overcame relationship difficulties with their youngsters and attained a favorable position to help their youngsters with their problem behaviors, they asked their behavior analyst for guidance and supervision in designing and implementing intervention plans. During this phase, the behavior analyst assumed responsibility for providing those buddies assigned to him with follow-up training and field work supervision. Much of this follow-up training took place at the biweekly training sessions, though the behavior analysts provided consultation and supervision by telephone on request, and through specially arranged meetings as needed in the field. These spontaneous consultation sessions, in addition to meeting the immediate needs of the buddies as they arose, also served the function of bridging the gap between biweekly training sessions. These long-distance consultation sessions by telephone as well as mutually arranged get-togethers in the field served to consolidate the team effort between buddies and behavior analysts and ensure follow-through in training.

Evaluation of Treatment Techniques

One part of the evaluation of the Buddy System focused on investigating the efficacy of various treatment techniques employed in the project during the first year. The project's research design attempted to specify the

relevant variables in the buddy-youngster configuration and to investigate their relative efficacy in producing behavior change. For this purpose, a 4 x 3 research design was employed. In this strategy, the effects of four approaches -- three experimental and one control -- were compared across three time periods: baseline, first intervention, and second intervention.

The three treatment conditions corresponded to three techniques that buddies utilized in attempting to effect behavior change with their youngsters. After stable baseline frequency recordings were made of specific target behaviors of youth participating in the project, one of the three treatment procedures was instituted with each youth. This constituted the first intervention. Upon stabilization of the occurrence of the target behavior, second intervention was implemented. This consisted of instituting the treatment procedure hypothesized to be the most effective.

Since each buddy had three youths assigned to him, the research design called for each buddy to respond differentially to his youngsters, each of whom was assigned randomly to one of the three treatment conditions. The buddy-youngster relationship was a part of all three conditions. The first condition consisted only of that relationship. In the second, the buddy gave social approval when the youngster improved on the target behavior. He was not asked to show disapproval for lack of improvement. The third treatment condition was similar to the second, except in addition, $10 of youth expense money was contingent upon improvement in the target behavior.

Each of these treatment conditions was operationalized in the following way:

1. Relationship only.

   Buddies were instructed that a warm and positive relationship that is always present (i.e., non-contingent) is most effective in producing

behavior change. Buddies were also instructed to spend the youth's monthly allotment of $10 in a non-contingent fashion.

2. Contingent social reinforcement.

Buddies were instructed that a warm and positive relationship that is particularly contingent upon the performance of desired behavior is likely to produce the greatest amount of behavior change. At the same time, the youngster's monthly allotment was to be spent on him in a non-contingent manner.

3. Contingent social and material reinforcement.

Buddies were instructed that in a warm and positive relationship that is contingent upon desired behavioral performance is effective in obtaining the greatest amount of behavior change. In addition, the monthly allotment was to be dispensed to the youngster on contingency for performance of the desired behavior.

4. No treatment-control.

This condition consisted of youngsters who were referred to the Buddy System, met all criteria of acceptability, but were not invited to participate in the project.

Daily records of the frequency of occurrence of the target behaviors were kept by the buddies. Behavioral frequency data were collected on a total of 42 youngsters: 26 with school attendance as the target behavior, N = 5, 7, 7, and 7 for conditions relationship, social reinforcement, social-material reinforcement, and control respectively; six with assorted target behaviors, all in the social-material reinforcement condition; and 10 with academic achievement as the target behavior, N = 6, 2, and 2 respectively for the three treatment conditions.[3]

The social-material reinforcement condition was hypothesized to be

the most effective treatment, and was therefore implemented during the second intervention phase. Each time period -- Baseline, Intervention I and Intervention II -- averaged six weeks in duration.[4]

Statistical comparisons among conditions and time periods were done with a test of the equality of two proportions (Freund, Livermore, and Miller, 1960). The behavioral frequency data were readily and conveniently put into the form of proportions, and thus made amenable to this test.

In addition, a multiple regression analysis was performed on the school attendance data, and yielded correlations among various combinations of conditions and time periods.

The effects of the different treatment approaches upon the truancy rates of youth are presented in Table 1.

TABLE 1

Effect of Intervention upon Truancy

Mean Truancy Rates in Percentage

CONDITION	BASELINE	INTERVENTION I	INTERVENTION II
1. Relationship (n = 5)	52.1%	57.0%	25.0%
2. Social Reinforcement (n = 7)	49.3%	19.8%	19.5%
3. Social-Material Reinforcement (n = 7)	44.3%	21.4%	14.3%
4. Control (n = 7)	54.1%	52.2%	56.1%

Implementation of the social reinforcement and social-material reinforcement conditions during Intervention I resulted in substantial reductions in truancy rate from Baseline ($ps < .001$). There was correspondingly little change from Baseline for the relationship-only and control groups

upon institution of first intervention. In addition, both the social and the social-material reinforcement groups had lower truancy rates during Intervention I than the relationship-only and control groups ($ps < .001$).

Upon institution of Intervention II, the truancy rate of youth in the social-material reinforcement group was again reduced ($p < .05$). More importantly, introduction of social-material reinforcement into the treatment programs of youth in the relationship-only group resulted in a significant decrease ($p < .001$) in truancy rate during Intervention II. The truancy rate of youngsters in the no-treatment control group showed no reliable change throughout the three time periods. As a result, the truancy rates at the conclusion of Intervention II were significantly lower for youth placed into a reinforcement condition than for those in the control condition ($ps < .001$).

A multiple regression analysis was done on the school data as an adjunct to the test of equality of two population proportions. It yielded the correlations between each of the treatment conditions and time periods presented in Table 2.

TABLE 2

Correlations Among Conditions and Time Periods

TIME PERIOD	TREATMENT APPROACH	CORRELATION
Baseline	Control	0.14
Baseline	Relationship	0.14
Baseline	Social Reinforcement	-0.15
Baseline	Social-Material Reinforcement	-0.11

TABLE 2 (continued)

TIME PERIOD	TREATMENT APPROACH	CORRELATION
Intervention I	Control	0.30
Intervention I	Relationship	0.30
Intervention I	Social Reinforcement	-0.33
Intervention I	Social-Material Reinforcement	-0.24
Intervention II	Control	0.43
Intervention II	Relationship	0.26
Intervention II	Social Reinforcement	-0.21
Intervention II	Social-Material Reinforcement	-0.45

While a wide variety of other behaviors were targeted for intervention, systematic data were collected by treatment conditions on a smaller number. Because of the extremely small N in some of the treatment conditions, the principal comparisons were among time periods within the social-material reinforcement group, and appear in Table 3.

TABLE 3

Effect of Social-Material Reinforcement Upon Assorted Targeted Behaviors

Frequency of Occurrence Expressed in Percentage of Days Each Week that the Problem Behavior Occurred

TIME PERIOD	MEAN PERCENTAGE
Baseline	58.2%
Intervention I	17.4%
Intervention II	7.6%

Data were collected on six youngsters who received social-material reinforcement treatment for assorted targeted behaviors (e.g., fighting, not doing chores, coming home late, not doing homework, etc.). The frequency of these behaviors during Intervention I changed markedly from Baseline ($p < .001$). Moreover, these changes were further consolidated under Intervention II, which improved from Intervention I ($p < .001$).

The effects of social and social-material reinforcement conditions on academic achievement as measured by quarterly grades were also compared with the relationship-only group for 10 additional youngsters. As Table 4 shows, none of the differences among treatment conditions or time periods approached statistical significance in academic achievement.

TABLE 4

Effect of Intervention Upon Academic Achievement

Mean Quarterly Grades*

CONDITION	BASELINE	INTERVENTION I	INTERVENTION II
1. Relationship (N = 6)	64.7%	64.7%	65.0%
2. Social Reinforcement (N = 2)	62.5%	68.1%	70.0%
3. Social-Material Reinforcement (N = 2)	61.2%	57.5%	60.0%
2. + 3. Social and Social-Material Reinforcement (N = 4)	61.9%	62.8%	64.7%

*A = 90%, B = 80%, C = 70%, D = 60%, F = 50%

These results suggest the successful application of the triadic model within the Buddy System. Training of mediators (buddies) resulted in behavior changes in targets (youths) as compared with control youngsters. In particular, instructing buddies in the contingent use of reinforcement resulted in improvement in school attendance and assorted target behaviors. Thus it appears that reinforcement may play a critical role in the buddy's attempt to effect behavior change with his target youth.

Intervention programs employing either social reinforcement or social-material reinforcement appear to be more effective in reducing school absences than intervention comprised of relationship only. In fact there are no reliable differences between relationship intervention and no intervention in terms of their efficacy in reducing truancy. Indeed, the relationship-only group does not differ from the control until Intervention II is instituted. Upon introduction of social and material rewards into the intervention program, truancy rates decrease significantly from baseline and first intervention.

The results are equivocal with respect to the relative efficacy of intervention employing social reinforcement or social-material reinforcement. While both modes of reinforcement intervention are effective in increasing school attendance from baseline, there are no reliable differences between them in their truancy rates during either intervention phase.

The failure to find differences between the social and social-material reinforcement conditions may be attributable to (1) the effects of contingent reinforcement being stronger than social-material differences, (2) the amount of material reward ($10 per month) being insufficient, or (3) the youngsters not perceiving that the $10 per month was in fact non-contingent in the social reinforcement condition.

Clearly, both reinforcement conditions appear effective in reducing school absences when this problem behavior is specifically targeted. Moreover, as the assorted target behavior data indicate, treatment approaches employing systematic reinforcement may be successful with a variety of problem behaviors including staying out late, fighting with siblings, not doing chores around the house, and not doing homework.

Overall, these findings suggest that reinforcement is a crucial ingredient in the behavior change process. The results support the importance and feasibility of promoting socially desirable behaviors in youth through the systematic application of contingent rewards. Through judicious use of social and material reinforcers, prosocial behaviors can be reliably fostered.

While the buddy-youngster relationship may be insufficient as a therapeutic ingredient, it may be an important part of the behavior change enterprise. Indeed, the buddy-youngster relationship is embedded in the social system through which behavior change is effected. The relationship is fundamental to and inseparable from the reinforcement delivery system. It is possible that the findings of this study are the result of a relationship-reinforcement interaction.

No reliable differences in academic achievement occurred among treatment conditions. As suggested by Tharp and Wetzel (1969), this may be because quarterly grades are an insensitive and unreliable measure. They often bear little correspondence to academic behavior, and are likely to be the product of the teacher's gross, subjective judgment of the student. Indeed, quarterly grades frequently do not measure any known specific behavior. In a number of cases, when specific academic behaviors such as studying and performance on weekly tests were targeted for intervention,

significant change occurred in these behaviors. However, more often than not, the quarter grade remained the same or declined. It appears, then, that when intervention programs target specific academic behaviors, and monitor the change with measures more directly related to academic performance, successful outcomes are more likely to be obtained. Because grades are socially significant, however, it may be that additional modes of intervention -- aimed directly at modifying teacher behaviors -- are called for in altering them.

In short, these findings indicate that the use of contingency procedures within the triadic model may be highly effective when the contingencies can be used with those who influence the target behavior. Thus, reinforcement contingencies effectively applied to both buddies and youngsters increased school attendance. However, when others who are not within the contingency system have influence on the target behavior, change is less likely to occur. For example, the Buddy System found that failure to exert influence over the relevant contingencies under which teachers operate resulted in failure to effect positive changes in those target behaviors under the functional control of the teachers. It is apparent, then, that those who employ this model of intervention must carefully assess to whom they can effectively apply contingencies and whether to devote change efforts at intermediary targets, such as parents and teachers.

Indeed, the logic of behavior modification in the natural environment calls for intervention techniques to be placed in the hands of those who, by virtue of a normal role relationship with the deviant individual, are in the best position to apply them effectively. Accordingly, an important role of the buddy is to influence natural mediators -- parents, teachers, and significant others in the target youngster's immediate environment --

to behave in ways that produce and maintain desired behavioral changes in the target. One of the primary functions of the buddy, then, is to identify and gain control of those reinforcement contingencies that exert functional control over those mediator behaviors which affect the target behavior. The implications of this view for the evolving role of the buddy point toward the utilization of artificial relationships more as adjunctive, rather than as primary mediating vehicles. In terms of the consultative triad, the role of the buddy may be construed as dual: that of mediator with target youth as well as that of behavior analyst vis-a-vis significant persons in the youth's natural environment.

In addition, it is essential that attempts be made to discern the functional relationship between behavior analyst contingencies and mediator behaviors and between consultant contingencies and behavior analyst behaviors. In this regard, the success of training and consultation is usually assessed by the twice-removed indices of the changes in the target's behaviors. Such indices are often too indirect to serve as precise and valid data for evaluating the process and outcome of training and consultation. Accordingly, a methodology for the systematic variation of aspects of consultant, behavior analyst, and mediator behaviors, both across and within cases, needs to be developed. In particular, reliable measures of behavior change for each link in the consultative chain need to be devised and related to behavior changes with target youth.

Finally, it might be useful to analyze the buddy-youngster relationship in terms of the warmth, empathy, and genuineness dimensions which figure so prominently in the work of Truax and Carkhuff (1967); to compare parent training with the use of buddies; and to compare the effectiveness of buddies working directly with the youngsters with those who serve as

mediators vis-a-vis parents and teachers. Some of these suggestions have been implemented in the second project year while others are planned for the near future.

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[3]Originally 15 buddies were assigned a youngster from each of the three treatment conditions. For various reasons, such as youngsters moving, frequency counts of target behavior not being taken, and baseline data indicating no problems, 10 youngsters were not included in the study. Only school attendance data were collected on control youth as this could be done unobtrusively.

[4]A more detailed description of procedures is available in Fo (1972).

These results suggest the successful application of the triadic model within the Buddy System. Training of mediators (buddies) resulted in behavior changes in targets (youths) as compared with control youngsters. In particular, instructing buddies in the contingent use of reinforcement resulted in improvement in school attendance and assorted target behaviors. Thus it appears that reinforcement may play a critical role in the buddy's attempt to effect behavior change with his target youth.

Intervention programs employing either social reinforcement or social-material reinforcement appear to be more effective in reducing school absences than intervention comprised of relationship only. In fact there are no reliable differences between relationship intervention and no intervention in terms of their efficacy in reducing truancy. Indeed, the relationship-only group does not differ from the control until Intervention II is instituted. Upon introduction of social and material rewards into the intervention program, truancy rates decrease significantly from baseline and first intervention.

The results are equivocal with respect to the relative efficacy of intervention employing social reinforcement or social-material reinforcement. While both modes of reinforcement intervention are effective in increasing school attendance from baseline, there are no reliable differences between them in their truancy rates during either intervention phase.

The failure to find differences between the social and social-material reinforcement conditions may be attributable to (1) the effects of contingent reinforcement being stronger than social-material differences, (2) the amount of material reward ($10 per month) being insufficient, or (3) the youngsters not perceiving that the $10 per month was in fact non-contingent in the social reinforcement condition.

Clearly, both reinforcement conditions appear effective in reducing school absences when this problem behavior is specifically targeted. Moreover, as the assorted target behavior data indicate, treatment approaches employing systematic reinforcement may be successful with a variety of problem behaviors including staying out late, fighting with siblings, not doing chores around the house, and not doing homework.

Overall, these findings suggest that reinforcement is a crucial ingredient in the behavior change process. The results support the importance and feasibility of promoting socially desirable behaviors in youth through the systematic application of contingent rewards. Through judicious use of social and material reinforcers, prosocial behaviors can be reliably fostered.

While the buddy-youngster relationship may be insufficient as a therapeutic ingredient, it may be an important part of the behavior change enterprise. Indeed, the buddy-youngster relationship is embedded in the social system through which behavior change is effected. The relationship is fundamental to and inseparable from the reinforcement delivery system. It is possible that the findings of this study are the result of a relationship-reinforcement interaction.

No reliable differences in academic achievement occurred among treatment conditions. As suggested by Tharp and Wetzel (1969), this may be because quarterly grades are an insensitive and unreliable measure. They often bear little correspondence to academic behavior, and are likely to be the product of the teacher's gross, subjective judgment of the student. Indeed, quarterly grades frequently do not measure any known specific behavior. In a number of cases, when specific academic behaviors such as studying and performance on weekly tests were targeted for intervention,

significant change occurred in these behaviors. However, more often than not, the quarter grade remained the same or declined. It appears, then, that when intervention programs target specific academic behaviors, and monitor the change with measures more directly related to academic performance, successful outcomes are more likely to be obtained. Because grades are socially significant, however, it may be that additional modes of intervention -- aimed directly at modifying teacher behaviors -- are called for in altering them.

In short, these findings indicate that the use of contingency procedures within the triadic model may be highly effective when the contingencies can be used with those who influence the target behavior. Thus, reinforcement contingencies effectively applied to both buddies and youngsters increased school attendance. However, when others who are not within the contingency system have influence on the target behavior, change is less likely to occur. For example, the Buddy System found that failure to exert influence over the relevant contingencies under which teachers operate resulted in failure to effect positive changes in those target behaviors under the functional control of the teachers. It is apparent, then, that those who employ this model of intervention must carefully assess to whom they can effectively apply contingencies and whether to devote change efforts at intermediary targets, such as parents and teachers.

Indeed, the logic of behavior modification in the natural environment calls for intervention techniques to be placed in the hands of those who, by virtue of a normal role relationship with the deviant individual, are in the best position to apply them effectively. Accordingly, an important role of the buddy is to influence natural mediators -- parents, teachers, and significant others in the target youngster's immediate environment --

to behave in ways that produce and maintain desired behavioral changes in the target. One of the primary functions of the buddy, then, is to identify and gain control of those reinforcement contingencies that exert functional control over those mediator behaviors which affect the target behavior. The implications of this view for the evolving role of the buddy point toward the utilization of artificial relationships more as adjunctive, rather than as primary mediating vehicles. In terms of the consultative triad, the role of the buddy may be construed as dual: that of mediator with target youth as well as that of behavior analyst vis-a-vis significant persons in the youth's natural environment.

In addition, it is essential that attempts be made to discern the functional relationship between behavior analyst contingencies and mediator behaviors and between consultant contingencies and behavior analyst behaviors. In this regard, the success of training and consultation is usually assessed by the twice-removed indices of the changes in the target's behaviors. Such indices are often too indirect to serve as precise and valid data for evaluating the process and outcome of training and consultation. Accordingly, a methodology for the systematic variation of aspects of consultant, behavior analyst, and mediator behaviors, both across and within cases, needs to be developed. In particular, reliable measures of behavior change for each link in the consultative chain need to be devised and related to behavior changes with target youth.

Finally, it might be useful to analyze the buddy-youngster relationship in terms of the warmth, empathy, and genuineness dimensions which figure so prominently in the work of Truax and Carkhuff (1967); to compare parent training with the use of buddies; and to compare the effectiveness of buddies working directly with the youngsters with those who serve as

mediators vis-a-vis parents and teachers. Some of these suggestions have been implemented in the second project year while others are planned for the near future.

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